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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/790,019  | 03/02/2004  | Tatsuya Yasunaga     | 249210US0           | 3568             |
| 22850   | 7590        | 04/04/2006           | EXAMINER            |                  |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.<br>1940 DUKE STREET<br>ALEXANDRIA, VA 22314 |             |                      | FISCHER, JUSTIN R   |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |

1733

DATE MAILED: 04/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/790,019 | <b>Applicant(s)</b><br>YASUNAGA ET AL. |  |
|                              | <b>Examiner</b><br>Justin R. Fischer | <b>Art Unit</b><br>1733                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama (JP 2002096403, newly cited) and further in view of Heishi (US 4,974,654, of record), Shemenski (US 4,446,198, newly cited), and Rubber Technology and Manufacture (RTM, newly cited). It is initially noted that a machine translation of Takayama is also included and will be relied upon below.

Takayama is directed to a method of forming a composite material or tire, wherein a green tire is preheated at a temperature between 60 and 100 degrees Celsius prior to vulcanization (Paragraph 18). In this instance, the reference specifically states that "metal wire" is included inside the unvulcanized tire at the bead region (Paragraphs 14 and 18) and while the reference fails to expressly teach that the metal wires are brass plated, it is extremely well known and conventional in the tire industry to brass plate metal wires in the tire industry- such a plating is well recognized as improving adhesion between a metal wire and the surrounding rubber. Heishi (Column 1, Lines 14-27), Shemenski (Column 1, Lines 5-26), and RTM (Page 296 and 400) evidence the well known and conventional use of brass plating with metal wires in the

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tire industry. It is emphasized that RTM recognizes the known use of brass plating dating back to the middle of the 19<sup>th</sup> century and more importantly, recognizes the modern day use of brass plating in specialized industries, particularly tires. Given these teachings, one of ordinary skill in the art at the time of the invention would have found it obvious to brass plate the metal wires of Takayama. Thus, the method of Takayama would involve pre-heating a tire assembly having brass-coated, metal wires in at a temperature between 60 and 100 degrees Celsius- this method would result in the claimed needle-like reaction products as they are formed as a direct result of the above noted method.

With respect to claim 2, in an analogous manner to the rejection noted above, it appears that the claimed dimensions (of the needle-like reaction products) would naturally result from performing the above-noted method on the tire of Takayama in view of Heishi, Shemenski, and RTM.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1-4 have been considered but are moot in view of the new ground(s) of rejection. It is initially noted that the previous rejections in view of Peter have been withdrawn since the method of Peter involves preheating a fully vulcanized carcass structure- as such, it does not appear that the claimed needle-like reaction products would be present at the interface between the rubber and the metal reinforcement. However, Takayama specifically details a method in which a green or unvulcanized tire is preheated at a temperature between 60 and 100 degrees Celsius and subsequently vulcanized. In this instance, the reference

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recognizes the well known and conventional inclusion of metal wires in at least tire component and while the reference fails to expressly teach the use of a brass plating, such a plating is extensively used in a large number of modern day tire construction to provide improved adhesion. Heishi, Shemenski, and RTM have been applied to evidence the well known and conventional use of brass plating with metal reinforcement elements in the tire industry. One of ordinary skill in the art at the time of the invention would have expected the metal wires of Takayama to include the claimed brass plating since said plating is extensively used in combination of metal wires/reinforcing elements.

It is agreed that Takayama, in an analogous manner to Peter, fails to expressly describe improved adhesion by controlling the needle-like reaction products. However, said products appear to naturally result from preheating a brass coated, metal wire at a temperature between 80 and 120 degrees Celsius. In this instance, the reference does not have to expressly point out the benefits set forth in applicant's disclosure. As set forth above, the reaction products would be expected to form as a result of practicing the method of Takayama in view of Heishi, Shemenski, and RTM and thus, improved adhesion would be obtained.

### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Justin Fischer". The signature is fluid and cursive, with the first name "Justin" and last name "Fischer" clearly distinguishable.

Justin Fischer

March 31, 2006